

EXPERIMENT:-6

Table 1: employees_2401020055

Emp_id	Emp_name	Emp_salary	Emp_department
1	Alice	50000	HR
2	Bob	60000	IT
3	Charile	75000	Finance
4	David	55000	Marketing
5	Emily	70000	IT

Table 2: projects_2401020055

Project_id	Project_name	Project_budget	Start_date
101	Project A	100000	2023-01-15
102	Project B	75000	2023-02-01
103	Project C	120000	2023-03-10
104	Project D	90000	2022-04-05
105	Project E	80000	2023-05-20

Table 3: assignments_2401020055

Emp_id	Project_id	Hours_worked
1	101	20
2	101	25
3	102	30
4	103	15
5	104	18
1	105	22
2	105	20

Problem 6.1: Find the projects with budgets greater than the average budget.

Solution 6.1:

```
SQL> select project_id,project_name from projects_2401020055 where project_budget > (select avg(project_budget) from projects_2401020055);
```

```
PROJECT_ID PROJECT_NAME
-----
101 Project A
103 Project C
```

Problem 6.2: Find the employees who worked on more than one project.**Solution 6.2:**

```
SQL> select emp_id,count(project_id) as project_count from assignments_2401020055 GROUP BY emp_id having count(project_id)>1;
```

```
EMP_ID PROJECT_COUNT
-----
1      2
2      2
```

Problem 6.3: Select employees who have a salary greater than the average salary in their department.

Solution 6.3:

```
SQL> select emp_name from employees_2401020055 e where emp_salary > ( select avg(emp_salary) from employees_2401020055 where emp_department = e.emp_department);
```

```
EMP_NAME
-----
Emily
```

Problem 6.4: Find the projects with no assigned employees.

Solution 6.4:

```
SQL> select project_name from projects_2401020055 where project_id not in (select project_id from assignments_2401020055);
no rows selected
```

Problem 6.5: Select employees who have not been assigned to any project.

Solution 6.5:

```
SQL> select emp_name from employees_2401020055 where emp_id not in (select emp_id from assignments_2401020055);
no rows selected
```

Problem 6.6: Calculate the total hours worked on each project.

Solution 6.6:

```
SQL> select project_id, sum(hours_worked) as total_hours from assignments_2401020055 group by project_id;
```

PROJECT_ID	TOTAL_HOURS
102	30
101	45
104	18
105	42
103	15

Problem 6.7: Find the employee with the highest salary.

Solution 6.7:

```
SQL> select emp_name from employees_2401020055 where emp_salary = (select max(emp_salary) from employees_2401020055);
EMP_NAME
-----
Charlie
```

Problem 6.8: Find the projects with the maximum and minimum budgets.

Solution 6.8:

```
SQL> select project_name, project_budget from projects_2401020055 where project_budget = (select max(project_budget) from projects_2401020055 ) or project_budget = ( select min(project_budget) from projects_2401020055 );
```

PROJECT_NAME	PROJECT_BUDGET
Project B	75000
Project C	120000

Problem 6.10: Find the employees who worked the most hours on a project.

Solution 6.10:

```
SQL> select emp_name from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where hours_worked in (select max(hours_worked) from assignments_2401020055));
```

```
EMP_NAME
-----
Charlie
```

Problem 6.11: Select the projects and the average hours worked on each project.

Solution 6.11:

```
SQL> select project_id, avg(hours_worked) as avg_hr_works from assignments_2401020055 group by project_id;
```

PROJECT_ID	AVG_HR_WORKS
102	30
101	22.5
104	18
105	21
103	15

Problem 6.12: Find the employees who have the same salary as Bob.

Solution 6.12:

```
SQL> select emp_name from employees_2401020055 where emp_salary = (select emp_salary from employees_2401020055 where emp_name='Bob');
```

```
EMP_NAME
-----
Bob
```

Problem 6.13: Select the employees who work in the same department as Alice.

Solution 6.13:

```
SQL> select emp_name from employees_2401020055 where emp_department in (select emp_department from employees_2401020055 where emp_name='Alice');
```

```
EMP_NAME
-----
Alice
```

Problem 6.14: Find the employees who have worked on a project with a budget greater than 80000.

Solution 6.14:

```
SQL> select emp_name from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where project_id in (select project_id from projects_2401020055 where project_budget > 80000));
```

```
EMP_NAME
-----
Alice
Bob
David
Emily
```

Problem 6.15: Count the number of employees who have not been assigned to project 101.

Solution 6.15:

```
SQL> select count(emp_id) as not_assigned from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where project_id <> 101);
```

```
NOT_ASSIGNED
-----
5
```

Problem 6.16: Select employees who have worked on projects starting after '2023-03-01'.

Solution 6.16:

```
SQL> select emp_id , emp_name from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where project_id in (select project_id from projects_2401020055 where start_date >= '1-mar-2023'));
```

```
EMP_ID EMP_NAME
-----
4 David
1 Alice
2 Bob
```

Problem 6.17: Find the employees with a salary greater than the average salary of employees working on project 105.

Solution 6.17:

```
SQL> select emp_id , emp_name from employees_2401020055 where emp_salary > (select avg(emp_salary) from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where project_id=105));
```

```
EMP_ID EMP_NAME
-----
2 Bob
3 Charlie
5 Emily
```

Problem 6.18: Select the employees who have worked more than 20 hours on any project.

Solution 6.18:

```
SQL> select emp_id,emp_name from employees_2401020055 where emp_id in (select emp_id from assignments_2401020055 where hours_worked > 20);
```

```
EMP_ID EMP_NAME
-----
1 Alice
2 Bob
3 Charlie
```

Problem 6.19: Find the projects where the total hours worked is greater than 50.

Solution 6.19:

```
SQL> select project_id , project_name from projects_2401020055 where project_id in (select project_id from assignments_2401020055 where hours_worked in (select sum(hours_worked) from assignments_2401020055 group by project_id having sum(hours_worked)>50));
```

no rows selected

Problem 6.20: Select the employees who have not worked on any project.

Solution 6.20:

```
SQL> select emp_id,emp_name from employees_2401020055 where emp_id not in (select emp_id from assignments_2401020055);
```

no rows selected

SUBMITTED BY:-

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